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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SCHNIZER, HOLLY G

ART UNIT PAPER NUMBER

1653

DATE MAILED: 04/10/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

FILE COPY
07/25/97

Office Action Summary

Applicant(s)

ALAM ET AL.

Examiner

Holly Schnizer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 11-65 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-8 and 11-65 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

Status of the Claims

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).
2. The original second appearing claim 7 and claim 8 were renumbered as Claims 9 and 10 and the claims that followed were renumbered accordingly (original claim 9 was renumbered as claim 11 and so on). Therefore, in the Preliminary Amendment filed June 25, 2001, Claims 9 and 10 (originally the second appearing claim 7 and 8) were cancelled, and renumbered Claims 64 and 65 (submitted as Claims 62 and 63) were added. Claims 1-8 and 11-65 are pending.

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-6, 11-16, 48-54, and 54-65, drawn to a heme binding protein isolated from *H. salinarum* having the sequence of SEQ ID NO:2 , classified in class 530, subclass 825.
 - II. Claims 1, 2, 7-8, 11, 12, 17-20, 55-56, and 64 are drawn to a heme binding protein isolated from *B. subtilis* having the sequence of SEQ ID NO:4, classified in class 530, subclass 825.

- III. Claims 21-22 , drawn to a method of treatment using the proteins of the invention, classified in class 514, subclass 2.
- IV. Claims 23-29 and 32-33, drawn to a method for controlled storage of oxygen using the heme binding protein isolated from *H. salinarum* having the sequence of SEQ ID NO:2, classified in class 436, subclass 68.
- V. Claims 23-25, and 30-33, drawn to drawn to a method for controlled storage of oxygen using the heme binding protein isolated from *B. subtilis* having the sequence of SEQ ID NO:4, classified in class 436, subclass 68.
- VI. Claims 34-43 and 46-47 are drawn to a method of sensing gaseous ligands using the heme binding protein isolated from *H. salinarum* having the sequence of SEQ ID NO:2, classified in class 436, subclass 127.
- VII. Claims 34-39 and 44-47 are drawn to a method of sensing gaseous ligands using the heme binding protein isolated from *B. subtilis* having the sequence of SEQ ID NO:4, classified in class 436, subclass 127.
- VIII. Claims 57-60, drawn to nucleic acid molecule having the sequence of SEQ ID NO:1, classified in class 536, subclass 23.1.
- IX. Claims 57 and 61-63, drawn to nucleic acid molecule having the sequence of SEQ ID NO:3, classified in class 536, subclass 23.1.

The inventions are distinct, each from the other because of the following reasons:

- 2. Inventions I, II, VIII, and IX are independent and distinct, each from the other, because they are products that possess characteristic differences in structure and

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function. The proteins of Inventions I and II are distinct from the nucleic acid molecules of VIII and IX in that they have different structures and functions and each has an independent utility, that is distinct for each invention which cannot be exchanged. For example, the nucleic acid molecules may be used as DNA hybridization probes whereas the protein may be used to make an antibody. In addition, the protein of Group I has a different and distinct sequence and is isolated from a different source than the protein of Group II. Likewise, the nucleic acid molecule of Group VIII has a different and distinct sequence and isolated from a different source than the nucleic acid molecule of Group IX.

3. Inventions I and II are related to Inventions III, IV and V, and VI and VII as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the proteins of Inventions I and II can be used in a process of making antibodies which is a materially different process than the method of treatment of Invention III, the method for controlled storage of oxygen of Inventions IV or V, or the method of sensing gaseous ligands of Inventions VI or VII.

4. Inventions III, IV, V, VI and VII are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, the method of treatment of Invention III, the methods for

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controlled storage of oxygen of Inventions IV and V, and the methods of sensing gaseous ligands have different starting points, method steps, and endpoints and accomplish different goals.

5. Inventions VIII and IX are unrelated to Inventions III, IV, V, VI, and VII.

Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case, the nucleic acid molecules of Inventions VIII and IX are not made by nor used in the methods of Inventions III, IV, V, VI, or VII.

6. Having shown that these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification and recognized divergent subject matter as defined by MPEP §808.02, the restriction for examination purposes as indicated is proper.

7. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim

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remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Schnizer whose telephone number is (703) 305-3722. The examiner can normally be reached on Mon. & Thurs., 8am-5:30pm and Tues. & Wed. 9-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Low can be reached on (703) 308-2923. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 308-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.


Holly Schnizer
April 8, 2002


CHRISTOPHER S. F. LOW
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